

1. (once amended) A method of providing an iron oxide complex for administration to a mammalian subject, the method consisting of:

E1
producing a carboxyalkylated reduced polysaccharide iron oxide complex; and
sterilizing the complex by autoclaving.

E2 6 7. (once amended) A method according to claim 1, wherein producing the complex includes carboxyalkylating a reduced polysaccharide by carboxymethylation.

E3 8 10. (once amended) A method according to claim 1, wherein the carboxyalkylated, reduced polysaccharide isolated as a sodium salt does not contain an infrared absorption peak in the region of about 1650 cm^{-1} to about 1800 cm^{-1} .

9 11. (once amended) A method according to claim 1, wherein producing the carboxyalkylated reduced polysaccharide is achieved at a temperature of less than about 50°C .

10 12. (once amended) A method according to claim 11, wherein producing the carboxyalkylated reduced polysaccharide is achieved at a temperature of less than about 40°C .

11 13. (amended) A method according to claim 1, wherein the iron oxide is superparamagnetic.

¹²
~~18.~~ (amended) A reduced polysaccharide iron oxide complex produced according to the method of claim 1, wherein the produced complex is stable at a temperature of at least 100 °C.

E4
¹³
~~19.~~ (once amended) A reduced carboxyalkylated polysaccharide iron oxide complex wherein the produced complex is stable at a temperature of about 121 °C.

¹⁴
~~20.~~ (once amended) A reduced polysaccharide iron oxide complex according to claim ¹³
~~19~~, wherein the produced complex is stable at a temperature of at least about 121 °C for a period of time effective to sterilize the complex.

¹⁵
E5 ¹⁵
~~22.~~ (once amended) A reduced polysaccharide iron oxide complex according to claim ¹⁴
~~20~~, wherein the carboxyalkylated reduced polysaccharide is selected from the group consisting of a carboxymethyl, carboxyethyl and carboxypropyl reduced polysaccharide.

¹⁶
E6 ¹⁵
~~24.~~ (once amended) A reduced polysaccharide iron oxide complex according to claim ¹⁵
~~22~~, wherein the reduced polysaccharide is a reduced dextran.

¹⁷
~~25.~~ (once amended) A reduced polysaccharide iron complex according to claim ¹⁵
~~22~~, wherein the carboxyalkylated reduced dextran is a carboxymethyl reduced dextran.

~~18~~
~~26~~. (twice amended) A reduced polysaccharide iron oxide complex according to claim
~~16~~
~~24~~, wherein the carboxyalkylated reduced dextran comprises at least about 750
micromole of carboxyl groups per gram of polysaccharide.

~~19~~
~~27~~. (twice amended) A reduced polysaccharide iron oxide complex according to claim
~~18~~
~~26~~, wherein the carboxyalkylated reduced dextran comprises at least about 900
micromole of carboxyl groups per gram of polysaccharide.

~~20~~
~~28~~. (twice amended) A reduced polysaccharide iron oxide complex according to claim
~~19~~
~~27~~, wherein the carboxyalkylated reduced dextran comprises at least about 1100
micromole of carboxyl groups per gram of polysaccharide.

~~21~~
~~29~~. (twice amended) A reduced polysaccharide iron oxide complex according to claim
~~20~~
~~28~~, wherein the carboxyalkylated reduced dextran comprises less than about 1500
micromole of carboxyl groups per gram of polysaccharide wherein said complex does not
form substantial particulates.

~~22~~ ~~33~~. (once amended) A method of providing a contrast agent for in vivo MRI of a subject
according to claim 1, consisting of the steps of:

~~27~~
formulating a composition which is a carboxymethylated reduced ultrasmall
superparamagnetic iron oxide complex; and
terminally sterilizing the composition by autoclaving.